

REMARKS

Claims 1-4 are pending. By this Amendment, Claim 4 is amended.

Applicant respectfully requests reconsideration of the Application and submits no new material is presented herein.

Entry of Response Being Proper

Entry of this Amendment is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issues requiring further search and/or consideration on the part of the Examiner; (c) satisfy a requirement of form asserted in the Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. Entry of the Amendment is thus respectfully requested.

Interview

The Applicant wishes to thank the Examiner for the interview granted on July 27, 2006. In the interview, claims 1 and 3, and the Cole et al. (U.S. Patent No. 5,452,164, "Cole") and Katz (U.S. Patent No. 4,458,279) references were discussed. As a result of the interview, the Examiner indicated that further consideration would be given to further amendments and arguments presented in the Response.

Claim Objections

Claim 4 was objected to for a minor informality therein. The Applicant has amended the claim, responsive to the objection. Accordingly, Applicant respectfully requests withdrawal of the objection.

Rejection Under 35 U.S.C. § 103

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,452,164 to Cole et al. ("Cole") in view of U.S. Patent No. 4,458,279 to Katz ("Katz"). Claims 2-4 depend from claim 1. To the extent that the above-noted rejections remain applicable to the claims currently pending, the Applicant traverses the rejection and respectfully submit that claims 1-4 recite subject matter that is neither disclosed nor suggested by the cited references.

As a preliminary matter, the Examiner clarified in the Interview that the reference name Okai et al. indicated on page 4, line 7, should read "Cole et al."

Claim 1 recites a method for manufacturing a thin-film magnetic head in an inductive recording head part forming process, the method including, *inter alia*, a non-magnetic layer being made of a material having an etching rate, for the ion milling free from using a reactive gas, equal to or higher than that of a material of a first magnetic layer and a second magnetic layer.

Under U.S. patent practice, in order to establish a *prima facie* case of obviousness, the prior art references must teach or suggest all of the claimed limitations. See MPEP §2142. In this case, there is no disclosure in Cole of the materials for the magnetic 80, 82 and non-magnetic G layers or an indication of etching rates thereof. The Applicant submits that the etching rate of materials depends upon the composition of the material itself. As acknowledged in the Office Action, "Cole fails to teach a material used for the non-magnetic layer, which having an etching rate equal to or higher than the magnetic layers". See page 3, lines 11-12 of the Office Action. Also, as acknowledged in the Office Action, "Cole et al. modified by Katz, fail to disclose

a material used for the first and second magnetic layers such as nitride containing iron (FeN)." See page 3, lines 20-21 of the Office Action. The Applicant notes that Katz similarly does not disclose that the insulating layer 16 (disclosed as silicon dioxide) "is made of a material having an etching rate equal to or higher than that of the material of the first magnetic layer and the second magnetic layer", as recited in claim 1, because there is no disclosed material for, and etching rate of, pole pieces 12, 26 for the first and second magnetic layers in Katz to compare to the insulating layer 16 and its respective etching rate.

Thus, neither Cole nor Katz teach or suggest a material forming the magnetic poles of the respective inventions at all. Therefore, Katz merely teaches Cole the use of a non-magnetic layer (of silicon dioxide), but does not teach the relationship between the etching rates of the magnetic 80, 82 and non-magnetic G layers of Cole. Specifically, modifying Cole with Katz would not teach a non-magnetic layer being made of a material having an etching rate equal to or higher than that of a material of said first magnetic layer and said second magnetic layer, because there is no disclosure or suggestion in Katz of a particular magnetic material with an etching rate to compare to the etching rate of the insulating layer 16 or non-magnetic material.

The Office Action asserts, though, that it would have been obvious to one skilled in the art to form the pole gap layer G of Cole from silicon dioxide, as taught by Katz, and the top pole tip element 84 and the bottom pole tip element 82 from FeN, as a matter of design choice, because Cole provides such a teaching and because "Applicant has not disclosed that the magnetic material [having an etching rate equal to or lower than that of the non-magnetic material] as recited in the claimed invention

provides an advantage, is used for a particular purpose, or solves a stated problem.” See the Office Action at page 3, line 21, through page 4, line 5. See page 4, lines 1-5 of the Office Action. The Applicant respectfully submits, however, that page 11, lines 14-22 of the specification provides ample support as to why the combination of materials forming the first and second magnetic layers recited in Claim 1 is not a matter of design choice.

Specifically, the material forming the first and second magnetic layers must be such that the material forming the non-magnetic layer has an etch rate, for ion milling free from using a reactive gas, equal to or higher than the material forming the first magnetic layer and second magnetic layer. This is expressly recited in Claim 1. Moreover, the Specification states that the combination of materials provides the claimed etching property, which results in control of the formation of the side surface of a three-layer pole structure. See the Specification at page 11, lines 18-22. Consequently, the claimed combination of materials prevents an increase of the recording track width and side fringe. Id. Therefore, the combination of materials forming the first and second magnetic layers and the non-magnetic layer, as recited in Claim 1, solves a problem existing in the art (*i.e.*, the ability to control the formation of the side surface of a three-layer pole tip structure), provides the advantage of controlling recording track width and side fringing, and, therefore, the claimed feature at issue has a particular purpose clearly articulated in the specification.

Because the specification itself explains why the claimed combination of materials is not a matter of design choice, the Office Action has impermissibly attempted to shift its burden to the Applicant to show nonobviousness. However, when

the Office Action fails to establish *prima facie* obviousness, the Applicant is under no obligation to submit any evidence of nonobviousness. See MPEP § 2142.

Accordingly, the selection of materials forming the magnetic layers is not a matter of mere design choice but, rather, provides a solution to an existing problem in the art, as explained above.

The Office Action has taken the position that Katz teaches silicon dioxide which has an etching rate equal to or higher than the magnetic material. See page 4, lines 17-20 of the Office Action. The Applicant respectfully submits that Katz merely discloses the existence of an insulating layer 16 between a first magnetic pole piece 12 and a second magnetic pole piece 26, but does not disclose the etching rate of the insulating layer 16 compared to the first and second magnetic pole pieces 12, 16, as required by claim 1. Under U.S. patent practice, silence in a reference is not a proper substitute for adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. In re Burt, 148 USPQ 548 (CCPA 1966). Therefore, because Katz is silent regarding the insulating layer 16 having an etching rate equal to or higher than the etching rate of the first and second magnetic pole pieces 12, 26, such silence is not a proper substitute for an adequate disclosure in Katz of the relationship between the etching rate of the insulting layer and the first and second magnetic pole pieces 12 and 26.

Further, the Applicant respectfully submits that the Office Action has used impermissible hindsight in making the rejection of claim 1. In this case, the Office Action stated that:

Katz teaches a process of making of a thin film magnetic head having a first pole piece (12) and a second pole piece (26) separated by an insulating layer made of silicon dioxide. **In light of the specification, the material made of silicon dioxide has a higher etching rate than the magnetic material.**" (Emphasis added).

See page 4, lines 17-20 of the Office Action. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and **not based on applicant's disclosure**. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Katz does not disclose the relationship between the etching rate of the first and second pole pieces 12, 26 and the etching rate of the insulating layer 16. The Applicant respectfully submits that the Office Action admittedly, yet impermissibly, used the Applicant's disclosure in its statement that the silicon dioxide in Katz has a higher etching rate than the magnetic material. The Office Action, however, cannot look to the Applicant's disclosure to cure the missing claim features of the cited references. Furthermore, the Applicant's specification also discloses that silicon dioxide can have an etching rate lower than that of magnetic material. See Table 1 on page 10 of the specification of the present application. Therefore, not only can the Applicant's

disclosure not support the Office Action statement and rejection, the Applicant's disclosure is also inapplicable under U.S. patent practice.

Furthermore, the Office Action statement that **the material made of silicon dioxide has a higher etching rate than the magnetic material** is not supported by either Cole or Katz. First, because Cole does not disclose silicon dioxide, second because Katz, although disclosing silicon dioxide, does not disclose an etching rate of a magnetic material to be compared with an etching rate of the non-magnetic material or silicon dioxide. Since no comparison can be made between the insulating layer 16 in Katz and the first and second pole pieces 12, 26, Katz does not disclose or suggest that the material made of silicon dioxide has a higher etching rate than the magnetic material. Therefore, the Applicant respectfully submits that, without the Applicant's disclosure, as apparently was used as a blueprint by the Office Action in arriving at the asserted rejections, the combination of Cole and Katz fails to disclose or suggest the features of the invention as recited in claim 1.

With respect to claim 3, the Office Action stated that "Cole et al. modified by Katz, fail to disclose a material used for the first and second magnetic layers **such as nitride containing iron (FeN)**". The Applicant respectfully submits that there is no disclosure or suggestion in either reference of FeN. FeN is only disclosed in the Applicant's disclosure.

Further, with respect to claim 3, the Office Action also took the position that "one of ordinary skill in the art, would have expected Applicant's invention to perform equally well with Cole et al. (sic) because the magnetic material of FeN **as recited in claimed invention** would perform equally well with the magnetic material of Cole et al, modified

by Katz.” Cole and Katz do not disclose or suggest FeN. The Applicant respectfully submits that it is improper to take the teachings of the present application and apply them to the cited references and assert that the prior art references would perform well with the teachings of the present invention. Specifically, it is improper to look to the applicants’ own disclosure for any teaching, suggestion, or motivation to modify or combine the prior art in such a way as to yield the claimed invention. See Interconnect Planning Corp. v. Feil, 227 USPQ 543 (Fed. Cir. 1985); Symbol Technologies, Inc. v. Opticon, Inc., 19 USPQ 2d 1241 (Fed. Cir. 1991). See also MPEP 2141.01 para. III.

The Applicant respectfully submits that because the entire feature of the non-magnetic layer being made of a material having an etching rate, for the ion milling free from using a reactive gas, equal to or higher than that of a material of the first magnetic layer and the second magnetic layer, is missing from both Cole and Katz, a *prima facie* case of obviousness cannot be established.

Therefore, because Cole and Katz, either alone or in combination, do not teach or suggest each and every feature recited in claim 1, as admitted by the Office Action, because the Applicant has submitted evidence in the specification as to why the claimed magnetic material [having an etching rate equal to or lower than that of the non-magnetic material] is not design choice, and because design choice motivation is based on the Applicant’s disclosure, the Applicant respectfully submits that claim 1 is not rendered obvious and should be deemed allowable.

Conclusion

The Applicant submits that claim 1 is allowable. Claims 2-4 depend from claim 1. Therefore, Applicant respectfully submits that claims 2-4 should be deemed allowable

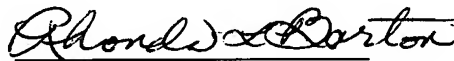
for at least the same reasons claim 1 is allowable, as well as for the additional subject matter recited respectively therein.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding objection and rejection, allowance of Claims 1-4, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 100186-00020**.

Respectfully submitted,



Rhonda L. Barton
Attorney for Applicant
Registration No. 47,271

Customer No. 004372
ARENT FOX PLLC
1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 638-4810

RLB/wbp